

5. CONTRIBUTIONS TO THE FAUNA OF ROTTNEST ISLAND.

No. I.

Introduction and Vertebrates.

(With one Plate VII.)

By

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Rottneest Island lies about 12 miles westerly of Fremantle, the port at the mouth of the Swan River, and is the first glimpse of Australia obtained by vessels approaching the Continent from South Africa and Ceylon. The island, which forms the northern extremity of two submerged ridges, the Five Fathom Bank, and that of which Garden Island and Carnac are elevated portions, is rather limited in extent. It measures less than seven miles from east to west and has a maximum north to south diameter of about $3\frac{3}{4}$ miles. The surface of the island is irregular, the highest point, Lighthouse Hill, 154 feet, is situated close to the centre of the island and overlooks much low-lying land to the north and east, including the numerous and extensive Salt Lakes, which in the winter time present most charming expanses of water whose place is taken by glistening stretches of snow-white salt in the later summer months, the area of the water being considerably reduced.

In the main, the land rises towards the north and west, where the "coastal limestone series" of which it is composed, has weathered to form rugged cliffs and prominent headlands separated here and there by smooth sandy beaches which vary with the season. The sand from these beaches is blown inland by the winds and has given rise to sandhills which fortunately are more or less anchored by the established vegetation. On the adjacent mainland this encroachment is slowly but surely advancing in spite of the efforts made to control it, and we may assume that the same is occurring upon Rottneest. At the "west end" some of these sandy patches are tunnelled like a rabbit warren owing to the activities of the Petrels that have selected this part of the island as the site of a breeding colony.

The surface soil is generally white and rich in lime and to it is added a certain amount of humus in sheltered corners in the hollows, and particularly near the few small freshwater swamps to be found here and there on the island. On the flats between the hills in the north-eastern quadrant marly soil with *Coxiella* is either exposed on the surface or covered with a thin layer of sand. The rich animal life in the lakelets and pools of this area contrasts very markedly with that of the salt lakes whose fauna seems to be limited to the larvae of a dipterous insect (? *Ephydra* sp.) Phyllopods (*Artemia salina*) and the Oniscids. *Haloniscus* and *Deto*.

Much of the island is clothed with dense wattle scrub tangled with creepers and undergrowth and traversed in all directions by the runs of *Setonix brachyurus* and by the tracks opened up to facilitate the passage of visitors from place to place or to provide the firewood used in the settlement during the summer season.

The first reference to the fauna of Rottnest is that made by Samuel Volekersen, skipper of the "Waeckende Boey," which visited the island in 1658; he states "here certain animals are found, since we saw many excrements, and besides two seals and a wild cat, resembling a civet cat, but with browner hair (*S. brachyurus*)†. Willem de Vlamingh sighted the coast on December 29th, 1696, and landed a party on the island. Two days later he remarked "There are very few birds there and no animals, except a kind of rat as big as a common cat, whose dung is found in abundance over all the island. There are also very few seals or fish."‡

In 1801, the French vessels "Géographe," and "Naturaliste" visited Western Australian waters, the latter reaching Rottnest on June 14th, where exploration and collecting were undertaken by the naturalist Bailly and others, the "civet cat" or "Kind of cat" of the earlier Dutch visitors, being identified as a "small species of Kangaroo."* Mention of snakes which are said to be fairly common is also made, and of lizards, presumably a species of *Lygosoma*.

Captain P. P. King visited the island in the "Bathurst," January, 1822, when his people saw many seals, the traces of a small kangaroo, a hawk, a pigeon and some sea birds, besides innumerable shells on the beaches of the Salt Lakes.† Seven years later Dr. T. B. Wilson and others, from the disbanded Raffles Bay Settlement, spent some time on Rottnest; the dogs catching two wallabies, and a member of the party shooting a snake about 5ft. long.‡

During the next 70 years little has been added to our knowledge of the land fauna of the island, until Mr. F. Lawson spent some time there making an extensive collection of birds skins which are now housed in the Museum. Twenty nine species were recorded of which only one, the *Ptilotis insularis* of Milligan,* showed any traces of the effects of long isolation. Mr. Lawson's field notes subsequently appeared in the "Emu."§

Additions to Lawson's list were made by Mr. O. H. Lipfert, who spent some time on the island in July, 1909; by Mr. D. L. Serventy, who has kindly allowed me to make use of his manuscript notes, and as a result of my recent visits.

Reptiles and Amphibians were collected by Dr. W. Michaelsen in 1905.** It was not my good fortune to obtain specimens of all of these, although I was able to add to the list.

MAMMALS.

Setonyx brachyurus Quoy & Gaimard. Quokka, Rottnest Island Wallaby.

This little Wallaby is quite plentiful on the island, being met with in all districts, including the vicinity of "The Settlement." The prohibition of firearms and the control of dogs on the island are wise provisions made by the Board of Control. It is much to be regretted that some wanton destruction is indulged in by youthful visitors during the summer months, when adequate supervision is impossible.

† ALEXANDER. Jour. W.A. Nat. Hist. and Sci. Soc. V.-1914, pp. 52-53.

‡ ALEXANDER. Jour. W.A. Nat. Hist. and Sci. Soc. V.-1914, pp. 54.

* ALEXANDER. Jour. Roy. Soc. W.A., I. 1914-5 (1916), p. 100.

† ALEXANDER. Jour. Roy. Soc. W.A. I. 1914-5 (1916), p. 123.

‡ ALEXANDER. Jour. Roy. Soc. W.A. III. 1916-7 (1918), p. 39.

* MILLIGAN. "The Emu" XI. p. 124, 1911.

§ LAWSON. A visit to Rottnest Island, Emu Vol. IV, 1905, p. 129.

** WERNER. Fauna Sudwest Australiens, II, parts 16 and 25.

BIRDS.

Eudyptes cristatus Miller, Crested Penguin.

A single specimen came ashore alive during Lipfert's visit to the island in 1909. The bird is in the W.A. Museum.

Phaps elegans Temm, Bush Bronze Wing.

I am informed that this Pigeon can be seen in a large patch of thick wattle scrub on the flat to the north of the Lighthouse Hill. This is not unlikely, for the species is to be found upon Garden Island.

Podiceps poliocephalus Jardine and Selby, Hoary headed Grebe.

A specimen of this widely distributed species has been seen on Garden Lake by D. L. Serventy, in March, 1927.

Podiceps Ruficollis Vroeg, Little Grebe or Dabchick.

Serventy noted a single specimen on Lake Bagdad in January, 1925.

Puffinus pacificus Gmelin, Wedge-tailed Petrel.

This species breeds in large numbers near Cape Vlaming, where sandy patches above the cliffs are often honey-combed with their burrows. Five specimens were collected 17th September, 1928. The birds were inhabiting the burrows in pairs, but no eggs were obtained, although six or seven nests were examined. Serventy noted young birds and eggs in January, 1925.

Macronektes giganteus Gmelin, Giant Petrel.

A specimen was caught at the Long Jetty, Thompson's Bay, on 19th September, 1928, by a Mr. Jarvis, who was fishing there at the time.

Diomedea chlororhyncha Gmelin, Yellow nosed Albatross.

I saw remains of a specimen during my visit, September, 1927.

Phalacrocorax varius Gmelin, Pied Cormorant.

It is not surprising that this species should be found on the island as it frequents the coastal waters of the adjacent mainland. The bird's presence was first noted by D. L. Serventy, it was also seen in September, 1927, and September, 1928.

Sterna bergii Lichtenstein, Crested Tern.

This handsome Tern was seen everywhere around the coast. Large flocks were seen on the Lady Edeline Beach and in Salmon Bay. There must have been at least a thousand birds in each flock.

Sterna nereis Gould, Fairy Tern.

This species was seen daily by D. L. Serventy during a week's stay in January, 1925. One or two individuals were seen by F. Lawson. W. B. Alexander states that it breeds on the island. Serventy found eggs and nestling on an islet in one of the salt lakes in January, 1925.

Sterna anaetheta Scopoli, Bridled Tern.

Breeds on the islets off the shore where the single egg is laid in a crevice in the limestone rock. Seen by Serventy on many occasions.

Larus novaehollandiae Stephens, Silver Gull.

Very plentiful everywhere.

Gabianus pacificus Latham, Pacific Gull.

A few birds were seen off the northern shore of the island in September, 1927. The species is also recorded by Alexander.

Arenaria interpres Linne, Turnstone.

This species has been seen by Lawson, Lipfert and Serventy. Specimens obtained by Lipfert are in the Museum.

Haematopus ostralegus Linne, Pied Oyster Catcher.

This species is a rare visitor.

Haematopus unicolor Forster, Sooty Oyster Catcher.

Mr. Lawson records the species from the West End. Alexander remarks "a few on rocky parts of the coast, especially Rottnest Island."

Erythrogonyx cinctus Gould, Red-Kneed Dotterel.

The species is said to have been seen on the island in the winter time.

Pluvialis dominicus P. L. S. Muller, Eastern Golden Plover.

A specimen, Cat. 1135, was presented to the Museum in 1903, by a Trustee, Dr. H. T. Kelsall, who obtained it on the island. Alexander states that flocks are to be seen on the island in the summer time.

Charadrius cucullatus Vieillot, Hooded Dotterel.

Lawson records a few specimens in company with other Waders.

Charadrius ruficapillus Temminck, Red-Capped Dotterel.

This species is very common on the various beaches: it breeds upon the islands.

Cladorhynchus leucocephalus Vieillot, Banded Stilt, or "Rottnest Snipe."

The species visits the Salt Lakes in large numbers during the summer months. Lawson says "they are very wary and on being disturbed fly to the centre of the lagoon, where they float lightly on the water." Alexander says they are winter visitors, but Serventy saw them in the summer. I have not seen the birds during my visits.

Recurvirostra novaehollandiae. Vieillot, Red-Necked Avocet.

Alexander says the species sometimes visits Rottnest.

Erolia testacea Vroeg, Curlew Sandpiper.

A common summer visitor. Several specimens are in the Museum Collection of Rottnest Birds.

Erolia ruficollis Pallas, Red Necked Stint, Little Stint.

A winter visitor, found on Rottnest. The Museum has specimens collected by Messrs. Baird, Conigrave and F. Lawson.

Erolia acuminata Horsfield, Sharp-tailed Sandpiper.

Visits the island in the summer months. It has been collected in November by Baird and Lawson.

Threskiornis spinicollis Jameson, Straw-necked Ibis.

Serventy saw this bird on the island in March, 1927.

Notophox novae hollandiae Latham, "Blue Crane."

Several specimens were seen on the Salt Lakes and upon the smaller swamps in August and September, 1927.

Demigretta sacra Gmelin, Reef Heron.

A few occur on the rocky portions of the coast ; they are said to breed on some of the islets. A specimen from the island (4856) is in the Museum. Serventy also notes the presence of the bird. A white individual, the *D. greyi* of certain authors, was seen at close quarters near North Point on September 13th, 1928.

Casarca tadornoides Jardine and Selby, Mountain Duck.

Many specimens were seen on the Salt Lakes, in one case the mother was accompanied by a large number of young—over 12 in all. In September, 1928, a family of 20 young was observed on Government House Lake.

Anas superciliosa Gmelin, Black Duck.

Lawson records the presence of this species which I can confirm as a result of the visit August-September, 1927.

Falco berigora Vigors & Horsfield, Brown Hawk.

Lawson says that the bird is not uncommon, its presence is confirmed by Serventy. I saw it near "the Neck."

Falco cenchroides Vigors & Horsfield, Nankeen Kestrel.

This species is said to be rare. It is, however, represented by Rottneest specimens in the Museum. One was seen "hovering" near Point Clune on several occasions, September, 1928 ; also seen at Bathurst Point, 12th October, 1928.

Pandion haliaetus Linne, Osprey or Fish Hawk.

Lawson found the bird breeding on the island, and Serventy confirms the record of the Bird's presence. I did not see it last year, but saw on overhead at Point Vlaming on September 18th, 1928. In addition to the old nest in Eagle Bay a second is now established in Lady Edeline Bay near the neck.

Ninox boobook Latham, Boobook Owl.

A fine specimen was seen in a tree near Bungalow 13 in August, 1927. It is not surprising that this nocturnal bird was not recorded earlier.

Neophema petrophila Gould, Rock Parrot.

This species is to be met with all over the island in small flocks. It is well represented in the Museum. A clutch of four eggs was obtained near North Point on September 13th, 1928.

Cuculus pallidus Latham, Pallid Cuckoo.

Lawson met this species sparingly.

Cacomantis flabelliformis Latham, Fan-tailed Cuckoo.

This species was first recorded by Lipfert, who obtained specimens in 1909.

Lamprococcyx plagosus Latham, Golden Bronze Cuckoo.

Like the preceding, Lipfert's record was substantiated by means of specimens.

Hirundo neoxena Gould, Welcome Swallow.

This swallow first recorded by Lawson, confirmed by Lipfert and Serventy, the former of whom collected specimens. The bird is quite plentiful near the settlement.

Hylochelidon nigricans (Vieillot, Tree Martin.

Serventy supplied the first record for this species; a single bird was seen in January, 1925.

Petroica goodenovii Vigors & Horsfield, Red Capped Robin.

This Robin is plentiful on Rottnest where it breeds regularly. It is very rare on the adjacent mainland though common further inland, the bird's presence on Rottnest is therefore significant for it cannot well be assumed that it is a recent immigrant introduced by strong easterly winds. Like the Quokka and the Rottnest singing Honey-eater, it is probably a very old resident.

Pachycephala pectoralis Latham, Golden Whistler.

Specimens are in the Museum. They were collected by O. H. Lipfert in 1909. I saw several near North Point in September, 1927.

Pachycephala rufiventris Latham, Rufous Whistler.

The existence of this bird is confirmed by specimens in the Museum. Serventy also records it.

Grallina cyanoleuca Latham, Magpie Lark.

I heard the call of this bird close to a freshwater swamp in the vicinity of North Point. Mr. Pearce, a resident, tells me that six or eight birds made their appearance on the island during the winter of 1928. He saw a specimen in August, about a week before I heard the call.

Coracina novae-hollandiae Gmelin, Black-faced Cuckoo Shrike.

This species was seen several times to the west of the Settlement in 1927 and 1928. A specimen (5757) is in the Museum.

Lalage tricolor Swains, White shouldered Caterpillar Eater.

Three specimens from the island (6359-61) are in the collection, they were collected by C. P. Conigrave in 1903.

Ephthianura albifrons Jardine & Selby, White-fronted Chat.

This striking little bird was met with in all parts of the Island in 1927 and 1928. As on the adjacent mainland the species is usually seen moving about in small flocks, its call is very distinctive and often betrays its presence before the bird is seen. Lipfert collected specimens in 1909.

Sericornis maculata Gould, Spotted Scrub-wren.

This little bird which is not uncommon on the coastal sandhills; occurs also on Rottnest.

Zosterops australasiae Vieillot, Western Silver Eye or Greenie.

This species is very common on the island. It is not at all shy and will come close to habitations searching for crumbs and so forth. Specimens were collected by Lipfert in 1909.

Meliphaga virescens Vieillot, Singing Honey-eater.

This is quite common on the island. Milligan* regarded the island form as a distinct species, *M. insularis*, because of its markedly darker colouration, but the R.A.O.U. Check List of 1926 will not recognise more than sub-specific rank for this form. Specimens collected by Lipfert are in the Museum collection.

Anthus australis Vieillot, Australian Pipit.

The bird is not uncommon on the open country where grass abounds. Specimens in the Museum were obtained by Lipfert in 1909.

Corvus coronoides Vigors & Horsfield, Australian Raven, Crow.

Both white-eyed and hazel-eyed individuals were seen. Crows are very abundant, even in the settlement where they are unmolested.

SNAKES.

Few species of snakes seem to be represented on the Island to-day. This may be a peculiarity due to natural causes or it may have resulted from the fact that for many years Rottneest was a penal settlement for native prisoners, who for some years, at any rate, were rewarded for every large snake they killed and submitted to the local authorities for inspection.

Typhlops australis Gray, Common Blind Snake.

A specimen of this burrowing snake was obtained by Prof. W. Michaelsen during his visit to the island in September, 1905 †

Demansia nuchalis Gunther, Brown Snake.

Dr Michaelsen collected three specimens, x there is one example in the Museum, and a specimen was seen near the Settlement in September, 1928.

Notechis scutatus Peters, Norne or Tiger Snake.

I am of opinion that I saw a specimen near the "west end" on the 17th September, 1928. Conversation with residents of long standing tend to support this, several of them described a Black Snake that showed fight and flattened its neck when roused, these features are well known characteristics of the Norne.

LIZARDS.

Little is known about the Lizards of the Island, In 1905 Dr. W. Michaelsen collected representatives of eight species, and during my two visits I obtained five of these and added *Egernia striolata*. I have no doubt that future visits will add to this exceedingly small list, It is curious that no Geckoes have yet been found. ‡

* A. W. Milligan. The Emu XI., p. 124. 1911.

† Fauna Sudwest Australiens, II., part 16, 1909, p. 256. X op. cit., p. 257.

‡ Since the above was written a party of campers, under the aegis of the Y.M.C.A., obtained specimens of *Phyllodactylus marmoratus* (Gray) and *Diplodactylus spinigerus* (Blugr) during January, 1929.

Lialis burtoni Gray.

This active little scale-footed Lizard is widely distributed, specimens were caught near Serpentine Lake and near Garden Lake. It was also recorded by Michaelsen.

Trachysaurus rugosus Gray.

One afternoon seven specimens were seen on a flat to the south of Government House Lake. One specimen was taken as a record.

Egernia kingii Gray.

This species was collected by Dr. Michaelsen, I believe I saw a specimen near Bathurst Point in 1927.

Egernia striolata Peters.

Specimens were caught on Mt. Herschell, and near Serpentine Lake in 1927-1928. It had not been previously recorded.

Lygosoma lesueuri Dum & Bibr.

A specimen of this active lizard was caught near Mt. Herschell, it had been seen previously in many localities along the north coast of the Island.

Lygosoma quadrilineatum Dum & Bibr.

This little lizard is everywhere. Eight specimens were obtained at North Point, Bathurst Point, Salmon Bay, Bickley Swamp and on the South shore of Government House Lake.

Lygosoma praepeditum Boulenger.

This almost legless lizard was collected by Dr. Michaelsen, 1905.

Ablepharus lineo-ocellatus Dum & Bibr.

Two specimens were obtained near Lake Herschell in 1927.

Ablepharus elegans Gray.

This lizard is included in the list on Dr. F. Werner's determination of species collected by Dr. Michaelsen.

BATRACHIA.

The conditions upon Rottnest might be considered unfavourable for the development of Amphibians, yet four species are already known from the island, and it is probable that others, including *Myobatrachus gouldi*, will be discovered in the near future, the island being far more hospitable than the Abrolhos where the latter species was obtained many years ago.

Limnodynastes dorsalis Gray.

Tadpoles presumed to belong to this species were obtained by Dr. Michaelsen. They were found to be plentiful in small freshwater pools to the west of the Bungalows in September, 1927, and 1928.

Heleioporus albopunctatus Gray.

This species was also collected by Dr. Michaelsen. I did not see it during my two visits.

Crinia signifera Gray.

This little froglet was found under stones in many parts of the island and specimens were obtained near Bickley Swamp, near the old Salt Works, and near Ursula's Lake, a freshwater pool to the west of the Bungalows.

Hyla aurea Lesson.

This species does not seem to be common, we found it near Garden Lake, but it was not noticed near any of the more or less permanent swamps where its presence might have been expected.

SUMMARY.

It is a curious feature of the distribution of our mammals that the Wallaby on the island should differ from the species of *Thylogale* found on the Abrolhos and upon Garden Island. Further, it must be noted that whilst the *Thylogales* on the Abrolhos and upon Garden Island are readily distinguished from the mainland forms; here is no apparent difference, except perhaps that of size, between the Rottnest *Setonyx* and that still living in swamps near Perth. In this connection it must be remembered that *Setonyx brachyurus* is, in the opinion of Professor F. Wood Jones, one of the most highly specialised of the Macropodidae and with *Dendrolagus* and *Dorcopsis* it comprises the brachydont section of the sub-family Macropodinae. *Setonyx* is confined to our South-West.

The birds offer no such marked peculiarities, their power of sustained flight enables most of them to cover 10 or 20 miles with ease, but mention must again be made of the abundance of the Red-Capped Robin and the distinct colouration of the island form of the Singing Honey Eater. Of the 12 land birds occurring on the Abrolhos six occur on Rottnest, the absence of the Quail, Rail, and Crake, may perhaps be accounted for by the fact that the island was formerly a penal settlement for native prisoners, who were given considerable liberty.

As far as we know at present, the species of Snakes recorded for the Abrolhos do not occur on Rottnest, which, however, presents no unusual feature when compared with the adjacent mainland.

Among the Lizards, Agamids and Varanids seem to be unrepresented. *Delma fraseri*, which is known from the Abrolhos, has not yet been met with, though present near Perth, and of the Skinks Rottnest and the Abrolhos have five species in common; whilst three Abrolhos species do not occur on Rottnest, *Egernia striolata*, *Ablepharus lineo-ocellatus*, and *A. elegans* are absent from the northern group of islands.

Of the four Batrachians on Rottnest, *Limnodynastes dorsalis* and *Crinia Signifera* are present on the Abrolhos and on the mainland, near Perth, whilst *Heleioporus albopunctatus* (auctorum) and *Hyla aurea* which occur in the Metropolitan area are absent on the Abrolhos. The Hyliid on the Abrolhos is the northern *Hyla rubella*. The fourth Abrolhos species, the remarkable *Myobatrachus gouldi*, is known from near Geraldton and further south, but has not yet been reported from Rottnest, though it may occur there.

Mr. Alexander* has referred to the strikingly southern character of the Abrolhos land fauna, but the resemblance is closer to the southern mainland than to Rottnest. There are peculiarities in the animal life on Rottnest that are rather suggestive of long isolation, whilst now and again, as in the Skink *Egernia striolata* and in the Red Capped Robin, we have suggestions of an affinity with the Darling Range rather than with the intervening Coastal plain. The evidence of certain land invertebrates points in the same direction.

* Jour. Lin. Soc. Zool. XXXIV. Feb. 1922, p. 467.

PLATE VII.

